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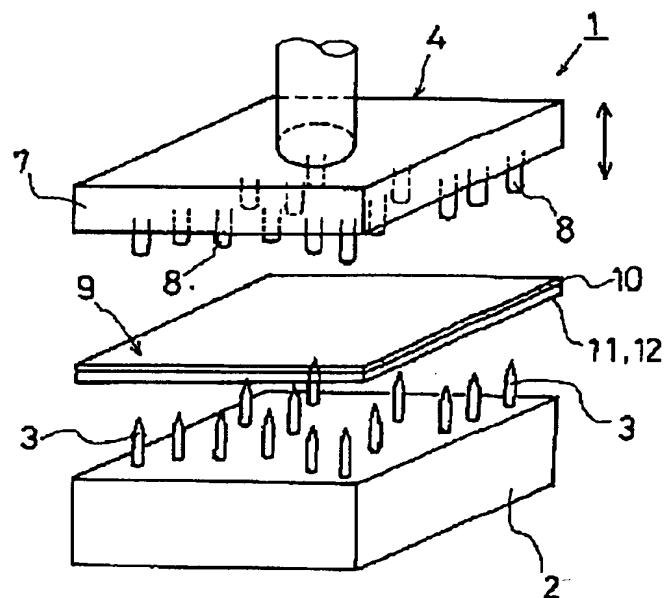
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TITLE : CONTACT PIN CLEANING SHEET



ABSTRACT : PURPOSE: To remove flux or the like, adhering to the contact pins of an in- circuit tester or the like, easily and quickly.

CONSTITUTION: A press member 4 and a fixture 2 provided with contact pins 3 are arranged having an interval between them, a printed board is held between and brought into contact, on the surface thereof, with the contact pins 3 thus inspecting an electronic circuit. In such inspection apparatus, a cleaning board 10 being inserted between the press member 4 and the fixture 2 and brought into contact with the press member 4 is provided with a cleaning sheet 9 comprising a plurality of layers of polymer film 11 coated with an adhesive 12 and being pierced by the contact pins 3. Since flux adhering to the contact pins 3 can be cleaned off by normal operation using the inventive sheet 9, significant reduction in manhour can be expected.

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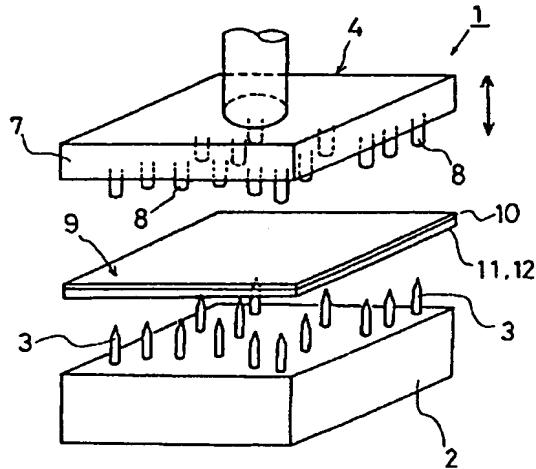
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(54)【発明の名称】 コンタクトピン清掃シート

(57)【要約】

【目的】 インサーキットスター等のコンタクトピンに付着したフラックス等を簡単迅速に取り除く。

【構成】 押え部材4とコンタクトピン3を装着したフィクスチャー2とを間隔を開けて配設し、プリント基板をこの間に挿入し、該プリント基板を前記押え部材4と前記フィクスチャー2とで挟持して基板表面を前記コンタクトピン3に接触させ、電子回路を検査する装置において、前記押え部材4と前記フィクスチャー2との間に挿入するための、押え部材4に当接させる清掃基板10に、コンタクトピン3を突き刺すための、粘着剤12をコーティングした高分子フィルム11を複数層貼着した清掃シート9を設けた。コンタクトピン3に付着したフラックス5を取り除くには、本シートの利用により通常操作で清掃でき、大幅な工数削減を期待することができる。



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ント基板圧接時の押圧力を加減できるようになっていく。

【0012】インサーキットテスター1による電子回路チェックは、部品実装済プリント基板を所定箇所に置き、押え部材4を下降させてプリント基板を押え棒8で押し、コンタクトピン3に接触させてプリント基板の回路検査を行なう。プリント基板にはフロー半田付け時にフラックス5が被覆され、コンタクトピン3とプリント基板の接触時にフラックス5がコンタクトピン3に付着する。

【0013】コンタクトピン3の清掃時には、清掃シート9を図1に示すように所定箇所に設置し、押え部材4を下降させコンタクトピン3と清掃シート9を接触させる。図4のaに示すように、コンタクトピン3の先割れ部14が突き刺さり、ばね16が緩衝する。コンタクトピン3が徐々に清掃シート9に侵入していくと(図4のb, c参照)、フラックス5が清掃シート9側に擦れらるるように付着していく。

【0014】コンタクトピン3の先割れ部14を所定深さまで突き刺した後、清掃シート9を上昇させてコンタクトピン3を清掃シート9から離すと(図4のd参照)、清掃シート9が元の状態に戻ろうとする力と粘着剤の働きにより、コンタクトピン3に付着していたフラックス5は清掃シート9に付着する。

【0015】以上のように、コンタクトピン3の清掃は、通常のプリント基板操作と同様に清掃シート9を操作するだけで行えるので、非常に簡単にコンタクトピン

3に付着したフラックス5を取り除くことができる。

【0016】

【発明の効果】本発明は、以上のように構成したコンタクトピン清掃シートであるから、コンタクトピンに付着したフラックスを取り除くには、従来多大な工数を要したが、本シートの利用により通常操作で清掃でき、大幅な工数削減を期待することができる。

【図面の簡単な説明】

【図1】本発明による実施例のコンタクトピンを清掃する部材を説明するための斜視図である。

【図2】図1に示すコンタクトピンの清掃シートを説明するための模式図である。

【図3】図1に示すコンタクトピンの側断面図である。

【図4】図1に示すコンタクトピンの清掃工程を連続にa, b, c, dの順に示した説明図である。

【図5】従来のコンタクトピンを清掃するための構成を説明する斜視図である。

【図6】従来のコンタクトピンの清潔時aと使用後bとの先端を示す側面図である。

20 【符号の説明】

2 フィックスチャー

3 コンタクトピン

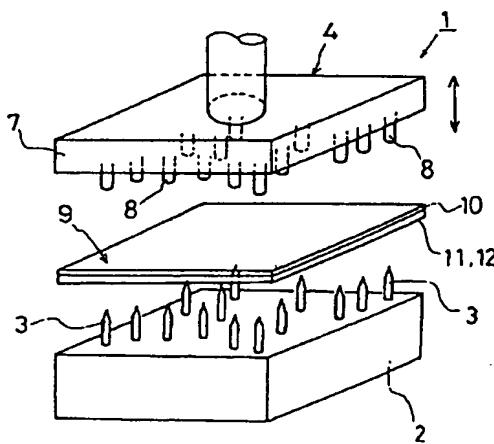
4 押え部材

9 清掃基板

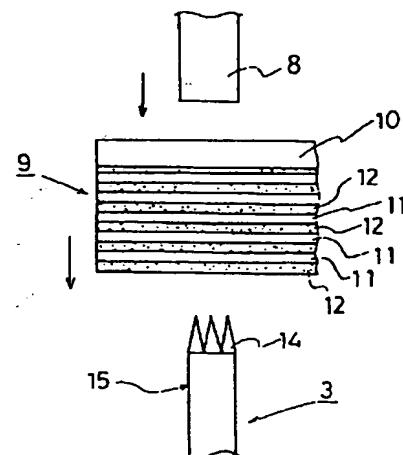
11 高分子フィルム

12 粘着剤

【図1】



【図2】



## \*NOTICES\*

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

#### [0001]

[Industrial Application] This invention relates to the contact pin cleaning sheet in the case of performing an electronic-circuitry check using a contact pin in the inspection process of electronics manufacturing.

#### [0002]

[Description of the Prior Art] Conventionally, in the production process of electronic equipment, in order to perform the electronic-circuitry check, an in-circuit tester, a function circuit tester, etc. which carry out using a contact pin two or more are arranged. The printed circuit board which performs an electronic-circuitry check is inspected in many cases, with the flux attached which remained on the occasion of soldering, and a contact pin breaks a flux layer, is stuck to a substrate front face by pressure, and can be energized and inspected.

[0003] What used two or more contact pins is used for the fixture 2 to which the measurement circuit of the in-circuit tester 1 shown in drawing 5 is attached as an example, and is making the top face set up two or more contact pins 3. The printed circuit board which formed the presser-foot member 4 above the fixture 2 free [ vertical movement ], and was inserted in between is depressed caudad, and two or more contact pins 3 are stuck to coincidence by pressure on a substrate front face. In JP,4-110675,A, it is indicated that you make it go up and down two or more contact pin side.

[0004] However, while inspecting many printed circuit boards, the flux 5 grade of extent for which inspection is affected as the tip of the contact pin 3 is shown in the drawing 6 left-hand side a at the beginning, and the clean thing shows right-hand side b adheres. For this reason, demounting the contact pin 3 from the body of a tester, attaching to a solvent and washing is made. When demounting from the body of a tester is complicated, it is common to wipe the tip of the contact pin 3 with brushes (or a brush, a cotton swab, etc.) 6, and to drop flux 5 grade on the condition of having attached in the body of a tester.

#### [0005]

[Problem(s) to be Solved by the Invention] By the way, when cleaning the tip of the contact pin 3, it wipes with brushes 6 (or brush etc.), but with the brush 6, removal of the matter with the viscosity of the flux 5 grade adhering to the contact pin 3 is difficult, and in order to remove finely, it takes time amount. In addition, if it demounts and washes from the body of a tester, although it will become beautiful, it takes time amount.

[0006] This invention aims at offering the contact pin cleaning sheet which can remove the flux adhering to a contact pin etc. simply quickly.

#### [0007]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, this invention opens spacing and arranges a presser-foot member and the fixture equipped with a contact pin. In the equipment which a printed circuit board is inserted in the meantime, this printed circuit board is pinched by said presser-foot member and said fixture, and a substrate front face is contacted at said contact pin, and inspects an electronic circuitry. It is characterized by sticking the two or more layers high polymer film which coated the cleaning substrate made to contact said presser-foot member for inserting between said presser-foot members and said fixtures with the binder for piercing a contact pin.

#### [0008]

[Function] Since this invention is constituted as mentioned above, it presses down a contact pin cleaning sheet instead of a printed circuit board, sets by making a high polymer film side into a contact pin side between a member and a fixture, operates a presser-foot member, narrows this spacing, and thrusts a contact pin into a high polymer film layer.

Then, if a presser-foot member is pulled up, the flux adhering to a contact pin will stick on a binder, and the flux which adhered at the tip of a contact pin will be removed.

[0009]

[Example] Hereafter, the example of this invention is explained based on an accompanying drawing. Cleaning of the contact pin 3 used for the in-circuit tester 1 shown in drawing 1 as an example is explained. The presser-foot member 4 of an in-circuit tester 1 consists of a top plate 7 and two or more pressure bars 8 prepared in the inferior surface of tongue, and goes up and down the presser-foot member 4 in the direction of an arrow head by a start switch etc. The fixture 2 which is located under the top plate 7 and has a measurement circuit is fixed, and two or more contact pins 3 are set up on the top face.

[0010] The cleaning sheet 9 of the contact pin 3 inserted in between the presser-foot member 4 and a fixture 2 sticks what coated with the binder 12 the cleaning substrate 10 manufactured by epoxy system resin at the high polymer films 11, such as a polyethylene film, with two or more layer (about 20 sheets are piled up) adhesives 12, as shown in drawing 2. The cleaning substrate 10 should just have the synthetic resin which prevents deformation of the contact pin 3 and the cleaning sheet 9 by the pressure bar 8, and has reinforcement, or rigidity at the time of descent of a top plate 7.

[0011] Moreover, as shown in drawing 3, the contact pin 3 is divided into the pin base 13 in which insertion hole 3a was prepared, and the pin point section 15 which has the point crack section 14, is making the spring 16 intervene, and can adjust now the thrust at the time of a printed circuit board pressure welding.

[0012] The electronic-circuitry check by the in-circuit tester 1 puts a component-mounting finishing printed circuit board on a predetermined part, drops the presser-foot member 4, contacts a printed circuit board at push and the contact pin 3 by the pressure bar 8, and conducts circuit conditioning of a printed circuit board. Flux 5 is covered by the printed circuit board at the time of flow soldering, and flux 5 adheres to the contact pin 3 at the time of contact of the contact pin 3 and a printed circuit board.

[0013] At the time of cleaning of the contact pin 3, the cleaning sheet 9 is installed in a predetermined part, as shown in drawing 1, the presser-foot member 4 is dropped, and the contact pin 3 and the cleaning sheet 9 are contacted. As shown in a of drawing 4, the point crack section 14 of the contact pin 3 is pierced, and a spring 16 buffers. if the contact pin 3 invades into the cleaning sheet 9 gradually (refer to b of drawing 4, and c), flux 5 should grind against the cleaning sheet 9 side -- \*\*\*\* -- it adheres like.

[0014] If the cleaning sheet 9 is raised and the contact pin 3 is separated from the cleaning sheet 9 after piercing the point crack section 14 of the contact pin 3 to the predetermined depth (refer to d of drawing 4), the flux 5 adhering to the contact pin 3 will adhere to the cleaning sheet 9 by work of the force and binder with which the cleaning sheet 9 tends to return to the original condition.

[0015] As mentioned above, since cleaning of the contact pin 3 can be performed only by operating the cleaning sheet 9 like the usual printed circuit board actuation, the flux 5 which adhered to the contact pin 3 very simply can be removed.

[0016]

[Effect of the Invention] Although this invention required the conventionally great man day in order to have removed the flux adhering to a contact pin, since it was the contact pin cleaning sheet constituted as mentioned above, use of this sheet can clean it by normal operation, and it can expect drastic man day reduction.

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[Translation done.]